

Strong competitors facilitate target name retrieval in simple picture naming

Oppenheim, Gary

Published: 01/09/2017

Peer reviewed version

[Cyswllt i'r cyhoeddiad / Link to publication](#)

Dyfyniad o'r fersiwn a gyhoeddwyd / Citation for published version (APA):
Oppenheim, G. (2017). *Strong competitors facilitate target name retrieval in simple picture naming*. Abstract from Architectures and Mechanisms in Language Processing 2017, Lancaster, United Kingdom.

Hawliau Cyffredinol / General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Strong competitors facilitate target name retrieval in simple picture naming

Intro: Semantic ‘inhibition’ in paradigms like picture-word interference is commonly assumed to reveal core properties of typical word production mechanisms: the distractor word *cat* interferes with naming a picture as *dog* because a lexical selection algorithm requires *dog* to overcome *cat*’s activation, so when *cat* is more activated it takes longer to select *dog*. However, considerable research over the past decade has raised questions about whether such ‘competitive’ RT effects may merely reflect artefacts of particular experimental tasks. Converging evidence from simpler tasks that lack such obvious experimental manipulations – such as timed picture-naming norms – would therefore strengthen the case that competition is an important, defining feature of typical lexical selection. In norms, name distributions for each picture are typically assumed to reflect the lexical activations on which selection operates, and pictures with higher name agreement are typically named faster than those with lower name agreement. Typical competitive selection accounts further predict that, *ceteris paribus*, concentrated competition from strong alternatives should hinder dominant name retrieval more than diffuse competition from an array of weaker competitors. For instance, given a picture that 50 people out of 100 name as *truck*, selecting *truck* should be slower if the remaining responses are split <45,5> between *lorry* and *van* (indicating a competitor nearly as strong as the target) than if they were split <25,25>.

Methods: After collecting timed naming norms from 100 native UK English speaking students for the 525 black and white line drawings of the International Picture Naming Project (Bates et al, 2003), via standard norming procedures (ibid), for each picture I identified the dominant (i.e. most common) and secondary (i.e. second-most-common) names and their observed frequencies.

Results: For 246 items, the dominant and secondary names were identified as coordinates of the same semantic category at the same level of specificity. These included synonyms and near-synonyms, e.g. truck/lorry, turtle/tortoise, but conservatively excluded simple morphophonological reductions or extensions, e.g. plane/aeroplane, hippopotamus/hippo, which might be considered subforms of a single lemma. Thus, for these items, the secondary name clearly represents a competitor for the dominant. Then, restricting the dataset to just the 18,516 trials in which participants produced the dominant name for these items, linear mixed effects regressions predicted their naming latencies as a function of the observed frequencies of both the picture’s a.) dominant name and b.) secondary name. Remarkably, increases in each predictor were associated with faster naming latencies. Observing faster dominant name RTs when the dominant name emerged more frequently replicates previous demonstrations that higher name agreement facilitates picture naming. But observing faster dominant name RTs when the *secondary* name emerged more frequently provides a novel challenge for theoretical claims that strong competitors should delay target word retrieval via competitive selection mechanisms.

References:

Bates, E., D’Amico, S., Jacobsen, T., Székely, A., Andonova, E., Devescovi, A., ... & Wicha, N. (2003). Timed picture naming in seven languages. *Psychonomic bulletin & review*, 10(2), 344-380.